Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

August 12, 2010

Ms. Rebecca Thomas
US EPA, Region 8
1595 Wynkoop St.
Denver, CO 80202-1129

Re: Draft Remedial Investigation Report, Operable Unit 5, Libby Asbestos National Priorities List Site, Libby, Montana (June 2010)

Dear Ms. Thomas:

The Montana Department of Environmental Quality (DEQ) appreciates the opportunity to comment on the Draft Remedial Investigation (RI) Report for Operable Unit 5 (OU5) of the Libby Asbestos Site. The DEQ looks forward to working with the EPA to expedite the remediation and redevelopment of OU5.

General Comments:

1. The text found on page 7-16, at the end of Section 7.5.4.1, explains visible vermiculite observations as follows: "The differences in the more recent visual vermiculite results compared to the original results likely arises from the inherently subjective nature of the category assignments, as well as variations in site conditions between rounds (e.g., cloud cover vs. sunshine, amount of ground cover, soil moisture, etc.)." DEQ suggests this text can be used appropriately throughout this entire document to fully explain the absolute relativity of any visible vermiculite results. It also supports the fact that no conclusions or relationships should be drawn from such information. DEQ suggests revision to the text as appropriate and the removal or revision of any conclusions or statements based on visible vermiculite results.

2. DEQ suggests including a section on recommendations if appropriate. Is there a need for additional data collection, as stated in Section 8.0, or a plan for identification and follow up with data gaps prior to the FS? Or, does EPA feel there is enough data to proceed with an FS? Or, does the FS need to wait for a site-wide risk assessment? What is the next step from this RI?

3. DEQ suggests including language in the document, clarifying for the reader, that LA, when it is present, will typically be present in vermiculite; however, not all vermiculite contains LA.

4. The risk discussion, presented in Section 7.0, is based on cancer and non-cancer risks associated with specific exposures by using the toxicity factors for chrysotile, because the toxicity factors for amphibole asbestos are not available. There is some indication that amphibole asbestos may have higher toxicity factors than chrysotile. The risk section should discuss the chrysotile vs. amphibole risk factors in detail.

5. DEQ suggests carefully reviewing the document and clarifying for the reader that vermiculite has not caused adverse health effects. LA and LA-containing vermiculite have caused adverse health effects.

6. DEQ also suggests the text include clear language indicating the human health risk assessment for OU5 can not be completed until the site-wide risk assessment is complete. Most people that are potentially exposed at OU5 may also be exposed at other locations within the entire Libby Asbestos Superfund Site on a regular basis.

7. As noted in a Specific Comment below, DEQ's policy supports an acceptable risk as being $1x10^{-5}$ or less. The DEQ suggests that the EPA require additional response action at locations in OU5 where the excess cancer risk exceeds $1x10^{-5}$.

8. There are no clear correlations between surface soil sampling results and ABS results in the same area. The RI should include specific details as to what sampling, testing, and analysis is needed to quantify the areas where response action may be required to achieve protective criteria.

9. Throughout the document, DEQ suggests revising "... EPA cleanup criteria ..." to read "... current EPA removal action level ..." where appropriate. The first location would be in the Executive Summary, Site Investigations, paragraph 4. DEQ will try to identify additional locations in the specific comments below but may not identify all locations of this text.

10. DEQ suggests the information in Section 1.6, beginning on page 1-5, be summarized and included in Section 5.0 (Nature and Extent of LA) to clarify what contamination still exists at OU5 and forms the basis for the risk assessment and potential response action.

11. DEQ suggests this RI report (in Section 3.0 Sampling and Analysis) should summarize the various soil sampling strategies and the various ABS strategies (2002-2009) that were employed to characterize the surface and subsurface soils at OU5 and to characterize the human exposures. The summary should include a description of the specific strategy, the reasons the specific strategy was used, and the results of each strategy.

12. DEQ suggests including a discussion regarding the tendency of asbestos fibers to adhere to larger particles and to remain in soil without leaching into groundwater (in Section 6.0 Contaminant Fate and Transport). This discussion would be very pertinent in explaining other media transport mechanisms and why those media are not of concern.

Specific Comments:

1. On page ES-1, under Executive Summary, in the third paragraph, and on page 1-3, Section 1.3, in the first paragraph: It may be helpful to explain why the different types of amphibole are not distinguished within the LA mixture. The last paragraph on page 5-1, in Section 5.1 attempts to do this. It would be helpful to provide a reference for such a statement or additional supporting information.

2. On page ES-1, Executive Summary, Overview, paragraph 3, sentences 3 and 4: Please consider revising to read: "However, vermiculite, the main ore extracted and processed at the mine, often contained asbestos, and therefore, vermiculite mining acted as a mechanism to spread asbestos throughout Libby. Raw vermiculite ore can contain from 0% to as high as 26% LA (Midwest Research Institute, 1982).

3. On page ES-4, Executive Summary, Risk Assessment, paragraph 1, sentence 1: Please consider revising to read: "Currently, the risk assessment (prepared by SRC, Inc.) uses available data to evaluate exposure pathways and estimate ...."

4. On page ES-4, Executive Summary, Risk Assessment, paragraph 6: Please specify whether the air samples will be recollected or the archived portion of the filter be re-analyzed through indirect preparation for use in remedial decisions for the boundary injection system building.

5. On page ES-7, Executive Summary, Risk Assessment, paragraph 8, last sentence beginning "This suggests that other locations with soil contamination levels that are similar ...": There is not enough data, even site-wide, to make such a bold statement regarding the use of ABS data as it relates to soil concentrations. There is no clear correlation between soil concentrations and ABS filter results. If there is, this document does not include enough information to support such a statement. The EPA should consider removing this sentence.

6. On page ES-7, Executive Summary, Risk Assessment, paragraph 12, sentence 1: Please consider revising to read: "The cancer risk estimates based on measured LA concentrations in air for each activity separately are within or ...." This would clarify that these results are not representative of cumulative risk since a site-wide cumulative risk assessment is not possible at this time.

7. On page 1-1, Section 1.1, paragraph 1: LA occurrences throughout OU5 are due to the handling and use of materials which contained LA. Please consider revising the last sentence, and other appropriate locations throughout the document, to accurately reflect the fate and transport of the contaminant in OU5.

8. On page 1-1, Section 1.1, paragraph 2, first sentence: Please replace "remediation efforts" with "removal efforts."

9. On page 1-1, Section 1.1, paragraph 3, bullet OU4: Please replace "Libby homes and businesses" with "Residential and commercial properties in and around Libby."

10. On page 1-1, Section 1.1, paragraph 3, bullet OU7: Please replace "the Town of Troy, Montana" with "Residential and commercial properties in and around Troy."

11. On page 1-3, Section 1.2, paragraph 2, last sentence: Please add "as" after "... as well ..." so that the sentence reads: "It encompasses approximately 400 acres and includes a number of commercial and industrial buildings as well as areas used for recreation."

12. On page 1.3, Section 1.3, paragraph 2: Vermiculite mining and milling operations occurred at OU2 and OU3, not at OU5. Transfer of mining related materials, etc. to various Libby locations were generally not bulk transfers, but were more of an incidental but frequent occurrence. Please revise the text to accurately describe the fate and transport of materials to and within OU5.

13. On page 1.3, Section 1.4, paragraph 1, sentence 3: Please remove "in" after "purchased" as the purchase date is provided at the end of the sentence.

14. On page 1.4, Section 1.4, last paragraph, last sentence: Please consider revising the text to read: "The majority of OU5 is un-vegetated and suitable for industrial/commercial redevelopment."

15. On page 1.5, Section 1.5, last paragraph: The last sentence is confusing, because the Grace settlement did generate the funds for the investigations and eventual remediation of OU5. Please consider revising the text to clarify the intent.

16. On page 1-5, Section 1.6, paragraph 1, sentence 3: Please delete "... and thoroughly ...."

17. On page 1-5, Section 1.6, paragraph 1, sentence 6: Please replace "cleanup" with "response."

18. On page 2-1, Section 2.1, paragraph 1, last sentence: Please replace "sort" with "short."

19. On page 2-1, Section 2.2, paragraph 1, last sentence: Please replace "though" with "through."

20. On page 3-1, Section 3.0, bullet 2, beginning "Certain other data ...," Please consider adding an explanation why "certain" indoor dust sample results and outdoor ambient air sample results were deemed irrelevant to the human risk assessment. Indoor dust sampling results and outdoor ambient air sampling results represent what people are breathing and should be critical to the risk assessment.

21. On page 3-2, Section 3.1.1, paragraph 3: Please provide an explanation why the unscripted personal air data could not be included in the site characterization and the risk assessment data base. Possibly revise the sentence to read: "... data were intended for occupational health and safety purposes and not for use in site characterization ...."

22. On page 3-2, Section 3.1.1, paragraph 6: DEQ is unclear how scripted air sampling activities were determined to provide the most meaningful measure of human exposure to LA at OU5. DEQ suggests another sentence or two in this document to support this statement. Given the reference, this appears to be the general EPA guidance and not a site-specific conclusion. DEQ suggests clarification of that as well.

23. On page 3-3, Section 3.1.1, paragraph 7: ABS data does not, in itself, provide the most meaningful measure of human exposure to LA in OU5. ABS measures direct exposure at a specific time and place and under specific conditions. Soil data could indicate a potential risk when the corresponding ABS data shows no exposure. DEQ suggests a broader data set be used for evaluating potential risk at OU5.

24. On page 3-3, Section 3.1.1, paragraph 8: DEQ suggests including a few more sentences to describe the time of year ABS sampling was conducted for both indoor and outdoor air and explain why that time of year was chosen. (i.e., the summer is the most dusty time period and this is considered the "worst case scenario.") For example, in the last paragraph of Section 3.1.1, was any ABS sampling conducted during other times of year? Why or why not?

25. On page 3-3, Section 3.1.1, paragraph 8, bullet 3: Is the "(e)" after "OU5 ..." a typographical mistake? If not, please explain the meaning.

26. On page 3-6, Section 3.1.4, paragraph 2, sentence 4: Please replace "filed" with "field."

27. On page 3-8, Section 3.2.2, Visual Inspection: The presence of visible vermiculite indicates that LA may be present, but an analysis via PLM-VE or TEM is required

to confirm the presence of LA. DEQ suggests providing some additional background as to why and what data supports the presumptive relationship between visible vermiculite and LA at OU5. Is there historical data that shows if it looks like vermiculite in Libby, then the analytical results support the fact that it contains LA? This would be a good discussion to include somewhere in this document. However, even with this "presumptive relationship," the RI needs to emphasize that "visible vermiculite" is not a reliable measure for determining risk and for developing the necessary response actions to reduce the risk to human health and the environment to acceptable levels.

28. On page 4.2, Section 4.3, paragraph 1, sentence 1: Please revise to read: "(Section 5.0)" rather than "(Section 5)."

29. Beginning on page 5-1, Section 5.0: Overall, this section should be clearer on what data was historical, what contamination was addressed by removal actions, and what contamination remains at the site. After reading this section, DEQ cannot determine what contamination still remains and at what levels. Historical data that has been replaced with current post-removal data is not important here.

30. Section 5.2: The status of all buildings, both occupied and vacant, should be documented (tabular format would be appropriate) to detail dust sample results, ABS results, presence of attic/wall insulation and/or contaminated soil, etc.

31. On page 5-2, Section 5.2, under Indoor Air, paragraph 1: Earlier in the document, the text states the importance of ABS air data in the calculation of risk. Therefore, is there a plan for the collection of ABS air data from the Finger Jointer Process Plant? Please explain in the text.

32. On page 5-2, Section 5.2, under Indoor Air, last paragraph: Is there any other information about these buildings that can possibly help correlate the air results to other data (e.g., dust concentrations, attic insulation, proximity to contaminated soil, historical use, etc)? A complete picture of the buildings and surrounding area would help the understanding of the data.

33. On page 5-2, Section 5.3, paragraph 1, first sentence: Please replace the word "cleanup" with the word "removal" as follows: "... EPA removal criteria for indoor dust ...."

34. On page 5-2, Section 5.3, paragraph 2, second sentence: Please replace the word "cleanup" with the word "removal" as follows: "... EPA removal criteria for indoor dust ...."

35. On pages 5-2 and 5-3, Section 5.3, second paragraph, first bullet and fourth bullet: Please identify the current status of the Former Tree Nursery area shed and the Guard Station at Libby Creek Bridge. The disposition or current location (if moved and not destroyed) of these buildings must be known and should be included here.

36. On page 5-3, Section 5.3, second paragraph, third bullet: Please identify the current status of the Diesel Fire Pump House (e.g., any removal actions taken, currently occupied, etc.). This would help explain why removal action was taken at the Central Maintenance Building and not at the Diesel Fire Pump House when the concentrations of LA in dust are reportedly the same. In addition, DEQ feels the speculation of the cause of the dust contamination is not supported by the figures of LA concentrations and visible results. There are limited detections anywhere near the pump house. While in theory this makes sense, the data reported for this OU does not support the statement.

37. On page 5-3, Section 5.3, second paragraph, second and third bullet: DEQ suggests double-checking the dust concentrations reported for both the Central Maintenance Building and the Diesel Fire Pump House. They are identical as written in this report, which may be accurate but seems unlikely.

38. On page 5-3, Section 5.3, last paragraph: This paragraph, as written and without any "post-removal action" dust data provided for either the Central Maintenance Building or the Diesel Fire Pump House is suggesting that the dust removal level, of 5,000 s/cm^2, is overly conservative. The dust loading was over 8,000 s/cm^2 in both buildings, and yet the risk is determined to be "below a level of concern." Is EPA suggesting the dust removal action level should be changed, and is there significant data to support such a change? DEQ suggests either clarifying this statement with supporting "post-removal action" dust clearance data or recognizing the implications of such a statement.

39. On page 5-4, Section 5.4, under Surface Soil, paragraph 5, last sentence: This is a very strong statement to make given the data base is from quantitative observations of visible vermiculite with an attempt to then quantify the composite scores. Given the mathematical calculation, the difference between 0.0 and 0.3 in a range that could max at 10 is very insignificant. The entire "composite score" and any type of correlation between these very low numbers and analytical concentrations is neither appropriate nor scientific and should be removed from this document.

40. On page 5-4, Section 5.4, under Surface Soil, paragraph 6: DEQ notes only one soil concentration result above 1%. DEQ does not agree that a single concentration above 1% constitutes a consistent trend. DEQ also notes the visible hits are very centralized. However, the text suggests the entire nursery area is loaded with visible and high concentrations. DEQ suggests revising the text to accurately reflect the current contaminant situation. DEQ also finds it interesting that under the current removal criteria, no further action would be taken on this site if this were a residence. This correlation between just barely "higher" PLM and "elevated" visible is very thin at best.

41. On page 5-4, Section 5.4, under Subsurface Soil, last sentence: DEQ suggests this sentence be revised to an affirmative tone. The negative statement is confusing. If the sentence is suggesting the contamination is surface only, please include confirmation that this conclusion is supported by the transport mechanisms identified in the CSM.

42. Section 6.0: DEQ suggests including discussion regarding the tendency of asbestos fibers to adhere to larger particles and their capacity to remain in soil and not leach into groundwater. This would be very pertinent to include in a discussion of other media transport mechanisms and therefore why those media are not of concern.

43. On page 6-1, Section 6.0, paragraph 2, sentence 2: Please revise to read: "... persistent in the ...."

44. On page 6-1, Section 6.0, paragraph 3: The transport mechanisms for asbestos containing material (ACM) and for asbestos can be different. Suspension in air and/or water is the main mechanism for transport of asbestos. Human movement is the main mechanism for transport of ACM. Please consider revising the text.

45. On page 6-2, Section 6.0, paragraph 8: DEQ suggests the text include a discussion of any data or research supporting the theory of transport of LA fibers attached to other heavier particles (e.g., small particles of ACM or air-borne particulate matter from a fire).

46. On page 7-1, Section 7.1, paragraph 2, sentence 2: Please revise this sentence to clarify that vermiculite has not caused health effects, but LA-contaminated vermiculite has caused health effects.

47. On page 7-1, Section 7.1, paragraph 5, 2nd sentence: Please replace "... at OU5 and ecological ..." with "... at OU5, an ecological risk assessment ...."

48. On page 7-3, Section 7.2.2, paragraph 2: The text indicates "EPA will consider the potential need to collect additional data that would be required to evaluate other potential exposure scenarios (e.g., exposure of tradespersons, exposures inside vehicles) after assessment of the primary pathways shown in Figure 7-2." DEQ suggests further clarification on how this assessment will occur. Is the future evaluation based on a conclusion from the four main pathways (e.g., if the cumulative doesn't show risk, then any lesser exposures wouldn't add to concern) or is EPA going to postpone this evaluation? DEQ suggests this is a significant data gap which may impact the completion of the FS.

49. Beginning on page 7-4, Section 7.3.1: The sub-section numbering is incorrect.

50. On page 7-9, Section 7.3.3, last paragraph: DEQ suggests additional language to relate this information specifically back to OU5. For example, what is the fiber size measured by the current analytical methods and what size is found at OU5?

51. On page 7-11, Section 7.4.2.1, last paragraph, sentence 3: Please revise to read: "EPA generally considers excess cancer risks that range between 1E-04 and 1E-06 acceptable." The State of Montana supports an "acceptable risk" as being $1x10^{-5}$ or less, and DEQ does not support $1x\ 10^{-4}$ as acceptable risk. DEQ suggests that EPA require additional response action at sites where the excess cancer risk exceeds $1x10^{-5}$. Please include language in the OU5 RI Report noting DEQ's position, and explaining how EPA will respect that position when a final Risk Assessment is complete and cleanup levels are determined.

52. On page 7-11, Section 7.4.2.1, last paragraph, last sentence: DEQ suggests additional language stating EPA will do a cumulative risk assessment at a later date for the entire Libby Asbestos Site and the OU5 risks will be included. This would help explain why we are spending time computing individual pathway risks.

53. On page 7-12, Section 7.4.2.2, paragraph 3: DEQ suggests the text should include a sensitivity analysis to determine the probability of the risk estimates being either high or low.

54. On page 7-14, Section 7.5.2, paragraph 2 and Table 7-5: For the unpaved adult row, the EPC value is "zero"; however, the text and the Moto X table entry indicates that the analytical sensitivity should be used in the case of non-detect. Please explain this discrepancy or revise. From the way the tables look, the non-detect from the Moto X create a higher risk than those with detects from the bike path.

55. On page 7-16, Section 7.5.4.1, paragraph 2: Visible vermiculite inspection of soil samples does not generate data that can be used to calculate the excess cancer risk. Soil samples need to be analyzed for LA by TEM to generate the data for risk calculations. Please revise the text to indicate the approach and plan for analyzing samples for risk and remedial decisions.

56. On page 7-18, Section 7.5.5, paragraph 1: Please explain the current status of the waste bark piles. Should the first sentence be revised to read "are" to "were"? This may also impact the language in Section 3.1.4.

57. On page 7-21, Section 7.6.4, paragraph 2, sentence 2: Please revise to read: "Consequently, absence of a reliable inhalation RfC may affect risk management decision-making in the case of LA."

58. On page 7-21, Section 7.6.4, paragraph 2: Please continue the explanation as it would pertain to the risk calculations for OU5.

59. On page 7-22, Section 7.6.6, first paragraph, third bullet: Since women can be "workers," please consider using another example of a different type of population – asthmatic, smoker, immunosuppressed, etc.

60. On page 7-22, Section 7.6.6, paragraph 3, sentence 1: Please delete "in."

61. On page 8-1, Section 8.0, Conclusion 3: This may be more of a site-wide conclusion although there is not adequate data to support such a statement. Please consider revising or removing based on DEQ's additional comments above.

62. On page 8-2, Section 8.0, Conclusion 11: Please revise to read: "... identified at OU5, an ecological ...."

DEQ appreciates the opportunity to review and comment on the OU5 RI. We look forward to our continued cooperative approach at the Libby Asbestos Site. Please contact me if you have any questions or need for clarification on any of these comments. I can be reached at (406) 841-5046 or rsloan@mt.gov.

Sincerely,

Richard Sloan

Dick Sloan
Federal Superfund Project Manager
Montana Department of Environmental Quality

cc: Remediation Files
Larry Scusa
Catherine LeCours
Kirsten Bowers